



Contract # 069099

STATE OF UTAH CONTRACT

1. **CONTRACTING PARTIES:** This contract is between the following agency of the State of Utah: **Department of Transportation** Agency Code: 810, **Proc/Various Regions** referred to as (STATE), and the following CONTRACTOR:

Sem Materials, L.P.

Name

95 West 100 North

Address

**N. Salt Lake
City**

**UT
State**

**84054
Zip**

LEGAL STATUS CONTRACTOR

- ☐ Sole Proprietor
☐ Non-Profit Corporation
☐ For-Profit Corporation
☒ Partnership
☐ Government Agency

Contact Person **James Hulse** Phone **801 295-3480**

Email jhulse@semgrouplp.com

Federal Tax ID# **571215443**

Vendor # **120731A**

Commodity Code # **74512000000**

2. **GENERAL PURPOSE OF CONTRACT:** The general purpose of this contract is to provide:
This is a requirements contract to provide the State with various types and grades of liquid asphalt. A Performance bond in the amount of \$1,574,761.50 is required.
3. **PROCUREMENT:** This contract is entered into as a result of the Procurement process on Bid#PM6032.
4. **CONTRACT PERIOD:** Effective date **07, January 2006** Termination date **06, January 2007** unless terminated early or extended in accordance with the terms and conditions of this contract.
Renewal options (if any): **One (1) year renewal.**
5. **CONTRACT COSTS:** This is a requirements contract. See attachment D for pricing.
6. **ATTACHMENT A:** Division of Purchasing's Standard Terms and Conditions
ATTACHMENT B: Scope of Work
ATTACHMENT C: Special Terms and Conditions
ATTACHMENT D: Itemized Price Lists.
Any conflicts between Attachment A and other Attachments will be resolved in favor of Attachment A.
7. **DOCUMENTS INCORPORATED INTO THIS CONTRACT BY REFERENCE BUT NOT ATTACHED:**
a. All other governmental laws, regulations, or actions applicable to the goods and/or services authorized by this contract.
b. Utah State Procurement Code, Procurement Rules and Contractors response to bid# PM6032 dated 12/21/05.
IN WITNESS WHEREOF, the parties sign and cause this contract to be executed.

**CONTRACTOR
SEE ATTACHED**

Contractor's signature

Date

James Hulse – Product Manager

Type or Print Name and Title

STATE 1/27/06
Agency's Signature Date

DPH FEB 23 2006
Director, Division of Purchasing Date

CONTRACT RECEIVED AND
PROCESSED BY

DIVISION OF FINANCE

FEB 24 2006

Director, Division of Finance

Date

LaDonna Haslem
Agency Contact Person

(801) 965- 4068
Telephone Number

(801) 965-4073
Fax Number

lhaslem@utah.gov
Email Address

(Revision 08/26/2003)

REC'D MAR 06 2006

MAIL TO:

STATE OF UTAH
DIVISION OF PURCHASING
3150 STATE OFFICE BUILDING, CAPITOL HILL
P.O. BOX 141061
SALT LAKE CITY, UTAH 84114-1061
TELEPHONE (801) 538-3026
<http://purchasing.utah.gov>

Invitation to Bid



Solicitation Number: PM6032

Due Date: 12/21/05 @ 2:00 P.M.

Date Sent: December 7, 2005

Agency Contract

Goods and services to be purchased: Provide Asphalt - Various Locations - Pickup and Delivery

Must Complete

| | | | |
|---|--|--|-------------------------------|
| Company Name Sam Materials, L.P. | | Federal Tax Identification Number 57-1215443 | |
| Ordering Address 95 West 1100 North | City North Salt Lake City | State UT | Zip Code 84054 |
| Remittance Address (if different from ordering address) P.O. Box 70008 | City Chicago | State IL | Zip Code 60673-7008 |
| Type <input type="checkbox"/> Corporation <input checked="" type="checkbox"/> Partnership <input type="checkbox"/> Proprietorship <input type="checkbox"/> Government | Company Contact Person James Hulse | | |
| Telephone Number (include area code) 801-295-3480 | Fax Number (include area code) 801-298-8349 | | |
| Company's Internet Web Address www.samgroup1p.com | Email Address jhulse@samgroup1p.com | | |
| Discount Terms (for bid purposes, bid discounts less than 30 days will not be considered) 10% EFT | Days Required for Delivery After Receipt of Order (see attached for any required minimums) As Required | | |
| The following documents are included in this solicitation: Solicitation forms, instructions and general provisions, Terms and Conditions, and specifications. <u>Please review all documents carefully before completing.</u> | | | |
| The undersigned certifies that the goods or services offered are produced, mined, grown, manufactured, or performed in Utah. Yes <input checked="" type="checkbox"/> No <input checked="" type="checkbox"/> If no, enter where produced, etc. 20% Grand Junction, CO | | | |
| Offeror's Authorized Representative's Signature | | Date 12/20/05 | |
| Type or Print Name JAMES HULSE | | Position or Title Product Manager | |

ATTACHMENT A: STANDARD TERMS AND CONDITIONS

1. **AUTHORITY:** Provisions of this contract are pursuant to the authority set forth in 63-56, Utah Code Annotated, 1953, as amended, Utah State Procurement Rules (Utah Administrative Code Section R33), and related statutes which permit the State to purchase certain specified services, and other approved purchases for the State.
2. **CONTRACT JURISDICTION, CHOICE OF LAW, AND VENUE:** The provisions of this contract shall be governed by the laws of the State of Utah. The parties will submit to the jurisdiction of the courts of the State of Utah for any dispute arising out of this Contract or the breach thereof. Venue shall be in Salt Lake City, in the Third Judicial District Court for Salt Lake County.
3. **LAWS AND REGULATIONS:** Any and all supplies, services and equipment furnished will comply fully with all applicable Federal and State laws and regulations.
4. **RECORDS ADMINISTRATION:** The Contractor shall maintain, or supervise the maintenance of all records necessary to properly account for the payments made to the Contractor for costs authorized by this contract. These records shall be retained by the Contractor for at least four years after the contract terminates, or until all audits initiated within the four years, have been completed, whichever is later. The Contractor agrees to allow State and Federal auditors, and State Agency Staff, access to all the records to this contract, for audit and inspection, and monitoring of services. Such access will be during normal business hours, or by appointment.
5. **CONFLICT OF INTEREST:** Contractor represents that none of its officers or employees are officers or employees of the State of Utah, unless disclosure has been made in accordance with 67-16-8, Utah Code Annotated, 1953, as amended.
6. **CONTRACTOR, AN INDEPENDENT CONTRACTOR:** The Contractor shall be an independent contractor, and as such, shall have no authorization, express or implied, to bind the State to any agreements, settlements, liability, or understanding whatsoever, and agrees not to perform any acts as agent for the State, except as herein expressly set forth. Compensation stated herein shall be the total amount payable to the Contractor by the State. The Contractor shall be responsible for the payment of all income tax and social security amounts due as a result of payments received from the State for these contract services. Persons employed by the State and acting under the direction of the State shall not be deemed to be employees or agents of the Contractor.
7. **INDEMNITY CLAUSE:** The Contractor agrees to indemnify, save harmless, and release the State OF UTAH, and all its officers, agents, volunteers, and employees from and against any and all loss, damages, injury, liability, suits, and proceedings arising out of the performance of this contract which are caused in whole or in part by the negligence of the Contractor's officers, agents, volunteers, or employees, but not for claims arising from the State's sole negligence.
8. **EQUAL OPPORTUNITY CLAUSE:** The Contractor agrees to abide by the provisions of Title VI and VII of the Civil Rights Act of 1964 (42USC 2000e) which prohibits discrimination against any employee or applicant for employment or any applicant or recipient of services, on the basis of race, religion, color, or national origin; and further agrees to abide by Executive Order No. 11246, as amended, which prohibits discrimination on the basis of sex; 45 CFR 90 which prohibits discrimination on the basis of age; and Section 504 of the Rehabilitation Act of 1973, or the Americans with Disabilities Act of 1990 which prohibits discrimination on the basis of disabilities. Also, the Contractor agrees to abide by Utah's Executive Order, dated March 17, 1993, which prohibits sexual harassment in the work place.
9. **SEPARABILITY CLAUSE:** A declaration by any court, or any other binding legal source, that any provision of this contract is illegal and void shall not affect the legality and enforceability of any other provision of this contract, unless the provisions are mutually dependent.
10. **RENEGOTIATION OR MODIFICATIONS:** This contract may be amended, modified, or supplemented only by written amendment to the contract, executed by the same persons or by persons holding the same position as persons who signed the original agreement on behalf of the parties hereto, and attached to the original signed copy of the contract.
11. **DEBARMENT:** The Contractor certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction (contract), by any governmental department or agency. If the Contractor cannot certify this statement, attach a written explanation for review by the State. The Contractor must notify the State Director of Purchasing within 30 days if debarred by any governmental entity during the Contract period.
12. **TERMINATION:** Unless otherwise stated in the Special Terms and Conditions, this contract may be terminated, with cause by either party, in advance of the specified termination date, upon written notice being given by the other party. The party in violation will be given ten (10) working days after notification to correct and cease the violations, after which the contract may be terminated for cause. This contract may be terminated without cause, in advance of the specified expiration date, by either party, upon 90 days prior written notice being given the other party. On termination of this contract, all accounts and payments will be processed according to the financial arrangements set forth herein for approved services rendered to date of termination.
13. **NONAPPROPRIATION OF FUNDS:** The Contractor acknowledges that the State cannot contract for the payment of funds not yet appropriated by the Utah State Legislature. If funding to the State is reduced due to an order by the Legislature or the Governor, or is required by State law, or if federal funding (when applicable) is not provided, the State may terminate this contract or proportionately reduce the services and purchase obligations and the amount due from the State upon 30 days written notice. In the case that funds are not appropriated or are reduced, the State will reimburse Contractor for products delivered or services performed through the date of cancellation or reduction, and the State will not be liable for any future commitments, penalties, or liquidated damages.
14. **SALES TAX EXEMPTION:** The State of Utah's sales and use tax exemption number is E33399. The tangible personal property or services being purchased are being paid from State funds and used in the exercise of that entity's essential functions. If the items being purchased are construction materials, they will be converted into real property by employees of this government entity, unless otherwise stated in the contract.

- 15. WARRANTY:** The contractor agrees to warrant and assume responsibility for all products (including hardware, firmware, and/or software products) that it licenses, contracts, or sells to the State of Utah under this contract for a period of one year, unless otherwise specified and mutually agreed upon elsewhere in this contract. The contractor (seller) acknowledges that all warranties granted to the buyer by the Uniform Commercial Code of the State of Utah apply to this contract. Product liability disclaimers and/or warranty disclaimers from the seller are not applicable to this contract unless otherwise specified and mutually agreed upon elsewhere in this contract. In general, the contractor warrants that: (1) the product will do what the salesperson said it would do, (2) the product will live up to all specific claims that the manufacturer makes in their advertisements, (3) the product will be suitable for the ordinary purposes for which such product is used, (4) the product will be suitable for any special purposes that the State has relied on the contractor's skill or judgment to consider when it advised the State about the product, (5) the product has been properly designed and manufactured, and (6) the product is free of significant defects or unusual problems about which the State has not been warned. Remedies available to the State include the following: The contractor will repair or replace (at no charge to the State) the product whose nonconformance is discovered and made known to the contractor in writing. If the repaired and/or replaced product proves to be inadequate, or fails of its essential purpose, the contractor will refund the full amount of any payments that have been made. Nothing in this warranty will be construed to limit any rights or remedies the State of Utah may otherwise have under this contract.
- 16. PUBLIC INFORMATION:** Contractor agrees that the contract will be a public document, and may be available for distribution. and Contractor gives the State express permission to make copies of the contract and/or of the response to the solicitation in accordance with the State of Utah Government Records Access and Management Act. The permission to make copies as noted will take precedence over any statements of confidentiality, proprietary information, copyright information, or similar notation.
- 17. DELIVERY:** Unless otherwise specified in this contract, all deliveries will be F.O.B. destination with all transportation and handling charges paid by the Contractor. Responsibility and liability for loss or damage will remain with Contractor until final inspection and acceptance when responsibility will pass to the State except as to latent defects, fraud and Contractor's warranty obligations.
- 18. ORDERING AND INVOICING:** All orders will be shipped promptly in accordance with the delivery schedule. The Contractor will promptly submit invoices (within 30 days of shipment or delivery of services) to the State. The State contract number and/or the agency purchase order number shall be listed on all invoices, freight tickets, and correspondence relating to the contract order. The prices paid by the State will be those prices listed in the contract. The State has the right to adjust or return any invoice reflecting incorrect pricing.
- 19. PAYMENT:** Payments are normally made within 30 days following the date the order is delivered or the date a correct invoice is received, whichever is later. All payments to the Contractor will be remitted by mail unless paid by the State of Utah's Purchasing Card.
- 20. PATENTS, COPYRIGHTS, ETC.:** The Contractor will release, indemnify and hold the State, its officers, agents and employees harmless from liability of any kind or nature, including the Contractor's use of any copyrighted or un-copyrighted composition, secret process, patented or un-patented invention, article or appliance furnished or used in the performance of this contract.
- 21. ASSIGNMENT/SUBCONTRACT:** Contractor will not assign, sell, transfer, subcontract or sublet rights, or delegate responsibilities under this contract, in whole or in part, without the prior written approval of the State.
- 22. DEFAULT AND REMEDIES:** Any of the following events will constitute cause for the State to declare Contractor in default of the contract: 1. Nonperformance of contractual requirements; 2. A material breach of any term or condition of this contract. The State will issue a written notice of default providing a ten (10) day period in which Contractor will have an opportunity to cure. Time allowed for cure will not diminish or eliminate Contractor's liability for damages. If the default remains, after Contractor has been provided the opportunity to cure, the State may do one or more of the following: 1. Exercise any remedy provided by law; 2. Terminate this contract and any related contracts or portions thereof; 3. Impose liquidated damages, if liquidated damages are listed in the contract; 4. Suspend Contractor from receiving future solicitations.
- 23. FORCE MAJEURE:** Neither party to this contract will be held responsible for delay or default caused by fire, riot, acts of God and/or war which is beyond that party's reasonable control. The State may terminate this contract after determining such delay or default will reasonably prevent successful performance of the contract.
- 24. PROCUREMENT ETHICS:** The Contractor understands that a person who is interested in any way in the sale of any supplies, services, construction, or insurance to the State of Utah is violating the law if the person gives or offers to give any compensation, gratuity, contribution, loan or reward, or any promise thereof to any person acting as a procurement officer on behalf of the State, or who in any official capacity participates in the procurement of such supplies, services, construction, or insurance, whether it is given for their own use or for the use or benefit of any other person or organization (63-56-73, Utah Code Annotated, 1953, as amended).
- 25. CONFLICT OF TERMS:** Contractor Terms and Conditions that apply must be in writing and attached to the contract. No other Terms and Conditions will apply to this contract including terms listed or referenced on a Contractor's website, terms listed in a Contractor quotation/sales order, etc. In the event of any conflict in the contract terms and conditions, the order of precedence shall be: 1. State Standard Terms and Conditions; 2. State Special Terms and Conditions; 3. Contractor Terms and Conditions.

ASPHALT MATERIALS

THE FOLLOWING ASPHALT MATERIAL SHALL BE QUOTED FOB POINT OF MANUFACTURER.

ADDRESS OF LOADING POINT FOR UDOT DISTRIBUTORS AND TANKERS TO LOAD MATERIAL:
95 West 1100 North, North Salt Lake City UT. 84054

| | |
|----------|---|
| 45 TONS | SC ASPHALT MATERIAL, VARIOUS GRADES |
| 145 TONS | MC ASPHALT MATERIAL, VARIOUS GRADES |
| 335 TONS | SS OR CSS EMULSIFIED ASPHALT MATERIAL, VARIOUS GRADES |
| 705 TONS | CRS2A OR CRS2B EMULSIFIED ASPHALT MATERIAL, VAR. GRADES |
| 25 TONS | LMCRS-2A ASPHALT MATERIAL |
| 560 TONS | ASPHALT, REJUVENATION - TYPE B - MODIFIED |
| 525 TONS | ASPHALT, REJUVENATION - TYPE C |
| 25 TONS | ASPHALT REJUVENATION - TYPE D |
| 25 TONS | HIGH FLOAT EMULSION, VARIOUS GRADES |
| 1 LOT | THE FOLLOWING ASPHALT MATERIAL SHALL BE QUOTED FOB DELIVERED TO ZONES AS SHOWN ON THE ATTACHED ASPHALT BID. |

**ASPHALT MATERIAL
F.O.B. DESTINATION
ZONE PRICE LIST**

This bid requires the vendor to give the State two (2) hrs. free unloading. Failure to bid as requested, could possibly cause the vendor to not be considered for award.

UDOT SPREAD Under this situation, the vendor supplies material and freight and the Department takes possession of the product and spreads. In this situation tax is not paid because the State is tax exempt.

The zones in each District/Region are designated on attached map as follows:

| | |
|---------------------|------------------|
| REGION 1 | ZONES 1A THRU 1H |
| REGION 2 | ZONES 2A THRU 2D |
| REGION 3 | ZONES 6A THRU 6G |
| PRICE DISTRICT | ZONES 4A THRU 4F |
| RICHFIELD DISTRICT | ZONES 3A THRU 3J |
| CEDAR CITY DISTRICT | ZONES 5A THRU 5F |

**UTAH DEPARTMENT OF TRANSPORTATION
MAINTENANCE DIVISION
ASPHALT MATERIAL**

SUMMARY SPECIFICATIONS

ALL ASPHALT MATERIAL SHALL COMPLY TO THE FOLLOWING SPECIFICATIONS.

THE FOLLOWING IS A SUMMARY OF ASPHALT MATERIAL WHICH ARE TO BE QUOTED FOB DELIVERED TO ZONES AS SHOWN ON THE ATTACHED ASPHALT BID SHEETS.

- | | | |
|-----|--------|---|
| 1. | 500 | TONS SC ASPHALT MATERIAL, VARIOUS GRADES |
| 2. | 250 | TONS MC ASPHALT MATERIAL, VARIOUS GRADES |
| 3. | 10,050 | TONS SS OR CSS, EMULSIFIED ASPHALT MATERIAL, VARIOUS GRADES |
| 4. | 8,500 | TONS CRS-2A, CRS-2B SEAL COAT EMULSIFIED ASPHALT MATERIAL, VARIOUS GRADES |
| 5. | 2,000 | TONS LMCRS-2A MATERIAL, VARIOUS GRADES |
| 6. | 0 | TONS ASPHALT REJUVENATOR - TYPE B |
| 7. | 1.775 | TONS ASPHALT REJUVENATOR - TYPE B, MODIFIED |
| 8. | 2,500 | TONS ASPHALT REJUVENATOR - TYPE C |
| 9. | 400 | TONS ASPHALT REJUVENATOR - TYPE D |
| 10. | 3,050 | TONS HIGH FLOAT EMULSION, VARIOUS GRADES |

NO STRIP ADDITIVE TO BE QUOTED BY N/A PERCENTAGE PER TON OF ASPHALT MATERIAL. (BIDDER MUST SPECIFY BRAND AND TYPE OF ADDITIVE TO BE USED.) SEE ZONE BID FOR PRICE PER TON. THE ASPHALT MATERIAL IN THIS REQUEST IS FOR BIDDING ONLY. THE FOLLOWING DISTRIBUTION OF ASPHALT MATERIAL QUANTITIES IS FOR INFORMATION ONLY AND IS NOT INTENDED TO IMPLY AGREED QUANTITIES. ACTUAL QUANTITIES NEEDED WILL DEPEND ON VOLUME OF WORK REQUIRED DUE TO ROAD SURFACE CONDITIONS AND FUNDING LIMITATIONS.

LIQUID ASPHALT REGIONS & DISTRICTS

| Type | Region 1 | Region 2 | Region 3 | Price | Richfield | Cedar |
|--|----------|----------|----------|-------|-----------|-------|
| SC | 0 | 0 | 0 | 0 | 500 | 0 |
| MC | 0 | 0 | 0 | 50 | 100 | 100 |
| SS OR CSS EMULSION | 0 | 0 | 7000 | 650 | 1200 | 1200 |
| CRS-2A, CRS-2B OR RS-2A, RS-2B | 500 | 0 | 0 | 0 | 4000 | 4000 |
| LMCRS-2A | 1000 | 0 | 0 | 0 | 0 | 0 |
| CRS-2R | 1000 | 0 | 0 | 0 | 0 | 0 |
| ASPHALT REJUVENATOR TYPE B | 0 | 0 | 0 | 0 | 0 | 0 |
| ASPHALT REJUVENATOR TYPE B (Modified) | 1000 | 0 | 0 | 575 | 200 | 0 |
| ASPHALT REJUVENATOR TYPE C | 1000 | 0 | 0 | 0 | 50 | 1450 |
| ASPHALT REJUVENATOR TYPE D | 200 | 0 | 0 | 0 | 0 | 200 |
| HFE, VARIOUS GRADES | 0 | 0 | 0 | 3050 | 0 | 0 |

THE ABOVE QUANTITIES ARE ESTIMATES FOR EACH YEAR OF THE NEXT ONE YEAR UNLESS OTHERWISE NOTIFIED.

ASPHALT MATERIAL DELIVERED BELOW THE REQUIRED TEMPERATURE SHALL BE REHEATED BY SUPPLIER OR REJECTED. ASPHALT MATERIAL DELIVERED ABOVE THE REQUIRED TEMPERATURE MAY BE ACCEPTED IF ALLOWED TO COOL TO THE MAXIMUM SPECIFIED TEMPERATURE PROVIDED OVERHEATING DOES NOT CAUSE COMPLIANCE PROBLEMS TO OTHER SPECIFICATIONS. COOLING SHALL BE ACCOMPLISHED WITH THE HATCHES CLOSED TO PREVENT THE LOSS OF DILUENTS.

THE SUPPLIER SHALL SUBMIT WITH THEIR BID THEIR METHOD TO REHEAT THE MATERIAL, IF IT IS BELOW THE MINIMUM REQUIRED TEMPERATURE. THE EVENT THE LOW BIDDER DOES NOT SUPPLY, AS SPECIFIED IN THE AGREEMENT, THE STATE RESERVES THE RIGHT TO OBTAIN MATERIAL FROM THE NEXT LOW BIDDER.

SOME EMULSIFIED ASPHALT SHALL BE BID PER TON DELIVERED IN CONCENTRATED FORM, DILUTED ONE (1) PART EMULSION TO ONE (1) PART WATER AND TWO (2) PARTS EMULSION FOR ONE (1) PART WATER. SEE ZONE SHEETS FOR THESE EMULSIONS.

**UTAH DEPARTMENT OF TRANSPORTATION
MAINTENANCE DIVISION**

ORDERS AND DELIVERIES

Asphalt Material shall be ordered by and delivered to the following:

REGION ONE
166 North Southwell Street
Ogden, Utah 84404
Phone: (801) 620-1600

REGION TWO
2010 South 2760 West
Salt Lake City, Utah 84104
Phone: (801) 975-4900

REGION THREE
658 North 1500 West
Orem, Utah 84057
Phone: (801) 227-8000

RICHFIELD DISTRICT
708 SOUTH 100 WEST
RICHFIELD, Utah 84701
Phone: (435) 896-1399

PRICE DISTRICT
940 South Carbon Ave.
Price, Utah 84501-0903
Phone: (435) 637-1470

CEDAR CITY DISTRICT
1470 North Airport Road
Cedar City, Utah 84721-1009
Phone: (435) 865-5500

**UTAH DEPARTMENT OF TRANSPORTATION
MAINTENANCE DIVISION**

INVOICE ADDRESSES

Asphalt Material to be invoiced to the Regions as follows:

REGION ONE
166 North Southwell Street
Ogden, Utah 84404 (801) 620-1600

REGION TWO
2010 South 2760 West
Salt Lake City, Utah 84104 (801) 975-4900

REGION THREE
658 North 1500 West
Orem, Utah 84057 (801) 227-8000

Richfield District, Price District and Cedar City District have been combined into a Southern Region. All invoices for these Districts shall be invoiced as follows:

REGION FOUR
1345 South 350 West
Richfield, Utah 84701
(435) 893-4799

ASPHALT MATERIAL

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Asphalt materials

1.2 PAYMENT PROCEDURES

- A. Price adjustments for asphalt cement and liquid asphalt (chip-seal emulsions and/or cut-backs):
 - 1. Standard department procedures governs price adjustments made where asphalt material does not conform to the specifications
 - a. If the price adjustment exceeds 30 percent, the Engineer may order the removal of any or all the defective asphalt material.
 - b. The pay factor for such material is 0.50 when allowed to remain in place.
- B. Price adjustments for Performance Graded Asphalt Binder (PGAB):
 - 1. Standard department PGAB management plan governs price reductions or removal of material where the binder does not conform to the specifications.

1.3 REFERENCES

- A. AASHTO M 81: Cut-Back Asphalt (Rapid-Curing Type)
- B. AASHTO M 82: Cut-Back Asphalt (Medium-Curing Type)
- C. AASHTO M 140: Emulsified Asphalt
- D. AASHTO M 208: Cationic Emulsified Asphalt
- E. AASHTO M 226: Viscosity Graded Asphalt Cement
- F. AASHTO M 320: Performance Graded Asphalt Cement
- G. AASHTO R 28: Accelerated Aging of Asphalt Binder Using a Pressurized Aging Vessel (PAV).
- H. AASHTO T 44: Solubility of Bituminous Materials
- I. AASHTO T 48: Flash and Fire Points by Cleveland Open Cup
- J. ASHTO T 49: Penetration of Bituminous Materials
- K. AASHTO T 50: Float Test for Bituminous Materials
- L. AASHTO T 51: Ductility of Bituminous Materials
- M. AASHTO T 59: Testing Emulsified Asphalt
- N. AASHTO T 201: Kinematic Viscosity of Asphalts
- O. AASHTO T 228: Specific Gravity of Semi-Solid Bituminous Materials
- P. AASHTO T 240: Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin-Film Oven Test)
- Q. AASHTO T 300: Force Ductility of Bituminous Materials
- R. AASHTO T 301: Elastic Recovery Test of Bituminous Materials by Means of a Ductilometer
- S. AASHTO T 313: Determining the Flexural Creep Stiffness of Asphalt Binder Using the Bending Beam Rheometer (BBR)

- T. AASHTO T 314: Determining the Fracture Properties of Asphalt Binder in Direct Tension
- U. AASHTO T 315: Determining the Rheological Properties of Asphalt Binder Using a Dynamic Shear Rheometer (DSR).
- V. AASHTO T 316: Viscosity Determination of Asphalt Binder Using Rotational Viscometer.
- W. ASTM D 92: Flash and Fire Points by Cleveland Open Cup
- X. ASTM D 1190: Concrete Joint Sealer, Hot-Applied Elastic Type
- Y. ASTM D 2007: Characteristic Groups in Rubber Extender and Processing Oils and Other Petroleum-Derived Oils by the Clay-Gel Absorption Chromatographic Method
- Z. ASTM D 2026: Cutback Asphalt (Slow-Curing Type)
- AA. ASTM D 3405: Joint Sealants, Hot-Applied, for Concrete and Asphalt Pavements
- BB. ASTM D 4402: Viscosity Determinations of Unfilled Asphalts Using the Brookfield Thermosel Apparatus
- CC. ASTM D 5329: Sealants and Fillers, Hot-Applied, For Joints and Cracks in Asphaltic and Portland Cement Concrete Pavements
- DD. ASTM D 5801: Toughness and Tenacity of Bituminous Materials
- EE. California Test Methods
- FF. UDOT Materials Manual of Instruction
- GG. UDOT Minimum Sampling and Testing Guide
- HH. UDOT Asphalt Binder Quality Management Plan

1.4 SUBMITTALS

- A. For each shipment of material, supply a vendor-prepared bill of lading showing the following information:
 - 1. Type and grade of material
 - 2. Type and amount of additives, used, if applicable
 - 3. Destination
 - 4. Consignee's name
 - 5. Date of Shipment
 - 6. Railroad car or truck identification
 - 7. Project number
 - 8. Loading temperature
 - 9. Net weight in tons (or net gallons corrected to 60 degrees F, when requested)
 - 10. Specific gravity
 - 11. Bill of lading number
 - 12. Manufacturer of asphalt material

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Each shipment of asphalt material must:
 - 1. Be uniform in appearance and consistency.
 - 2. Show no foaming when heated to the specified loading temperature.
- B. Do not supply shipments contaminated with other asphalt types or grades than those specified.

1.6 GRADE OF MATERIAL

- A. The Engineer determines the grade of material to be used based on the supply source designated by the Contractor when the bid proposal lists more than one grade of asphalt material.

PART 2 PRODUCTS

2.1 PERFORMANCE GRADED ASPHALT BINDER (PGAB)

- A. Supply PGABs under the Approved Supplier Certification (ASC) System. Refer to the UDOT Minimum Sampling and Testing Guide, Section 509, Asphalt Binder Management Plan.
- B. As specified in AASHTO M 320 for all PGABs having algebraic differences less than 92 degrees between the high and low design temperatures.
- C. As specified in Tables 1, 2, 3, 4, 5, 6, 7, and 8 for all PGABs having algebraic differences equal to or greater than 92 degrees between the high and low design temperatures.

Table 1
PG58-34

| Original Binder | | |
|--|---|------------|
| Dynamic Shear Rheometer, AASHTO T 315 | @58°C, G*, kPa | 1.30 Min. |
| | @58°C, phase angle, degrees | 74.0 Max. |
| Rotational Viscometer, AASHTO T 316 | @135°C, Pa.s | 3 Max. |
| Flash Point, AASHTO T 48 | °C | 260 Min. |
| RTFO Residue, AASHTO T 240 | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @5°C, G*/sinδ, kPa | 2.20 Min. |
| Elastic Recovery, AASHTO T 301 mod ¹ | % | 65 Min. |
| PAV Residue, 20 hours, 2.10 Mpa, 100 °C, AASHTO R 28 | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @16°C, kPa | 5000 Max. |
| Bending Beam Rheometer, AASHTO T 313 | @-24°C, S, MPa | 300 Max. |
| | @-24°C, m-value | 0.300 Min. |
| Direct Tension Test, AASHTO T 314 | @-24°C, Failure Strain, % | 1.5 Min. |
| | @-24°C, Failure Stress ² , MPa | 4.0 Min. |
| ¹ Modify paragraph 4.5 as follows: After 20 cm has been reached, stop the ductilometer and within 2 seconds, sever the specimen at its center with a pair of scissor... | | |
| ² No allowances will be given for passing at a colder grade | | |

Table 2
PG64-28

| Original Binder | | |
|---|---|------------|
| Dynamic Shear Rheometer, AASHTO T 315 | @64°C, G*, kPa | 1.30 Min. |
| | @64°C, phase angle, degrees | 74.0 Max. |
| Rotational Viscometer, AASHTO T 316 | @135°C, Pa.s | 3 Max. |
| Flash Point, AASHTO T 48 | °C | 260 Min. |
| RTFO Residue, AASHTO T 240 | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @64°C, G*/sinδ, kPa | 2.20 Min. |
| Elastic Recovery, AASHTO T 301 mod ¹ | % | 65 Min. |
| PAV Residue, 20 hours, 2.10 Mpa, 100 °C, AASHTO R 28 | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @22°C, kPa | 5000 Max. |
| Bending Beam Rheometer, AASHTO T 313 | @-18°C, S, MPa | 300 Max. |
| | @-18°C, m-value | 0.300 Min. |
| Direct Tension Test, AASHTO T 314 | @-18°C, Failure Strain, % | 1.5 Min. |
| | @-18°C, Failure Stress ² , MPa | 4.0 Min. |
| ¹ Modify paragraph 4.5 as follows: After 20 cm has been reached, stop the ductilometer and within 2 seconds, sever the specimen at its center with a pair of scissors... | | |
| ² No allowances will be given for passing at a colder grade | | |

Table 3
PG64-34

| Original Binder | | |
|---|-----------------------------|------------|
| Dynamic Shear Rheometer, AASHTO T 315 | @64°C, G*, kPa | 1.30 Min. |
| | @64°C, phase angle, degrees | 71.0 Max. |
| Rotational Viscometer, AASHTO T 316 | @135°C, Pa.s | 3 Max. |
| Flash Point, AASHTO T 48 | °C | 260 Min. |
| RTFO Residue, AASHTO T-240 | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @64°C, G*/sinδ, kPa | 2.20 Min. |
| Elastic Recovery, AASHTO T 301 mod ¹ | % | 70 Min. |
| PAV Residue, 20 hours, 2.10 Mpa, 100 °C, AASHTO R 28 | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @19°C, kPa | 5000 Max. |
| Bending Beam Rheometer, AASHTO T 313 | @-24°C, S, MPa | 300 Max. |
| | @-24°C, m-value | 0.300 Min. |

Table 7

| PG76-22 | | |
|---|---|------------|
| Original Binder | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @76°C, G*, kPa | 1.30 Min. |
| | @76°C, phase angle, degrees | 71.0 Max. |
| Rotational Viscometer, AASHTO T 316 | @135°C, Pa.s | 3 Max. |
| Flash Point, AASHTO T 48 | °C | 260 Min. |
| RTFO Residue, AASHTO T 240 | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @76°C, G*/sinδ, kPa | 2.20 Min. |
| Elastic Recovery, AASHTO T 301 mod ¹ | % | 70 Min. |
| PAV Residue, 20 hours, 2.10 Mpa, 100 °C, AASHTO R 28 | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @ 31°C, kPa | 5000 Max. |
| Bending Beam Rheometer, AASHTO T 313 | @-12°C, S, MPa | 300 Max. |
| | @-12°C, m-value | 0.300 Min. |
| Direct Tension Test, AASHTO T 314 | @-12°C, Failure Strain, % | 1.5 Min. |
| | @-12°C, Failure Stress ² , MPa | 4.0 Min. |
| ¹ Modify paragraph 4.5 as follows: After 20 cm has been reached, stop the ductilometer and within 2 seconds, sever the specimen at its center with a pair of scissors... | | |
| ² No allowances will be given for passing at a colder grade | | |

Table 8

| PG76-28 | | |
|---|---|------------|
| Original Binder | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @76°C, G*, kPa | 1.30 Min. |
| | @76°C, phase angle, degrees | 71.0 Max. |
| Rotational Viscometer, AASHTO T 316 | @135°C, Pa.s | 3 Max. |
| Flash Point, AASHTO T 48 | °C | 260 Min. |
| RTFO Residue, AASHTO T 240 | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @76°C, G*/sinδ, kPa | 2.20 Min. |
| Elastic Recovery, AASHTO T 301 mod ¹ | % | 75 Min. |
| PAV Residue, 20 hours, 2.10 Mpa, 100 °C, AASHTO R 28 | | |
| Dynamic Shear Rheometer, AASHTO T 315 | @28°C, kPa | 5000 Max. |
| Bending Beam Rheometer, AASHTO T 313 | @-18°C, S, MPa | 300 Max. |
| | @-18°C, m-value | 0.300 Min. |
| Direct Tension Test, AASHTO T 314 | @-18°C, Failure Strain, % | 1.5 Min. |
| | @-18°C, Failure Stress ² , MPa | 4.0 Min. |
| ¹ Modify paragraph 4.5 as follows: After 20 cm has been reached, stop the ductilometer and within 2 seconds, sever the specimen at its center with a pair of scissors... | | |
| ² No allowances will be given for passing at a colder grade | | |

2.2 ASPHALTIC CEMENT, LIQUID ASPHALTS, REJUVENATING AGENTS

- A. As specified in AASHTO M 226, Table 2 with the following modifications:
- Delete and replace ductility at 77°F (25°C) with ductility at 39.2°F (4°C) with values as detailed below.
- | | | | |
|-----------------|---------------|----------------|----------------|
| <u>AC - 2.5</u> | <u>AC - 5</u> | <u>AC - 10</u> | <u>AC - 20</u> |
| 50+ | 25+ | 15+ | 5+ |
- B. As specified for cationic and anionic emulsified asphalt:
- All standard Slow Setting (SS, CSS), Medium Setting (MS, CMS), and Rapid Setting (RS, CRS) grades; inclusive of all High-Float designations (HF).
 - Supply under the Approved Supplier Certification System (ASC).
 - Meet AASHTO M 208 and M 140.
- C. Conform to the requirements of one of these tables:
- Table 9: Cationic Rapid Setting Emulsified Polymerized Asphalt (CRS-2P)
 - Table 10: Latex Modified Cationic Rapid Setting Emulsified Asphalt (LMCRS-2)
 - Table 11: Cationic Medium Setting Emulsified Asphalt (CMS-2S)
 - Table 12: High Float Medium Setting Emulsified Asphalt (HFMS-2)
 - Table 13: High Float Medium Setting Emulsified Polymerized Asphalt (HFMS-2P)
 - Table 14: High Float Rapid Setting Emulsified Polymerized Asphalt (HFRS-2P)
 - Table 15: Cationic Rapid Setting Emulsified Asphalt (CRS-2A, B)
- D. Curing cut-back asphalt:
- As specified for slow curing (SC) in ASTM D 2026.
 - As specified for medium curing (MC) in AASHTO M 82.

3. As specified for rapid curing (RC) in AASHTO M 81.

E. Conform to requirements for Emulsified Asphalt Pavement Rejuvenating Agent:

1. Table 16: Type B
2. Table 17: Type B Modified
3. Table 18: Type C
4. Table 19: Type D

Table 9

| Cationic Rapid Setting Emulsified Polymerized Asphalt (CRS-2P) | | | |
|--|---------------------------|-------------|-------------|
| Tests | AASHTO Test Method | Min. | Max. |
| Emulsion | | | |
| Viscosity, SF, 140°F (60°C), s (Project-site Acceptance/Rejection Limits) | T 59 | 100 | 400 |
| Settlement (a) 5 days, percent | T 59 | | 5 |
| Storage Stability Test (b) 1 d, 24 h, percent | T 59 | | |
| Demulsibility (c) 35 ml, 0.8% sodium dioctyl Sulfosuccinate, percent | T 59 | 40 | |
| Particle Charge Test | T 59 | Positive | |
| Sieve Test, percent | T 59 | | 0.10 |
| Distillation | | | |
| Oil distillate, by volume of emulsion, percent | | | 0 |
| Residue (d), percent | | 68 | |
| Residue from Distillation Test | | | |
| Penetration, 77°F (25°C), 100 g, 5 s, dmm | T 49 | 80 | 150 |
| Ductility, 39.2°F (4°C), 5 cm/min, cm | T 51 | 35 | |
| Toughness, lb-in | ASTM D 5801 | 75 | |
| Tenacity, lb-in | ASTM D 5801 | 50 | |
| Solubility in trichloroethylene, percent | T 44 | 97.5 | |
| (a) The test requirement for settlement may be waived when the emulsified asphalt is used in less than a five-day time; or the purchaser may require that the settlement test be run from the time the sample is received until it is used, if the elapsed time is less than 5 days. | | | |
| (b) The 24-hour (1-day) storage stability test may be used instead of the five-day settlement test. | | | |
| (c) The demulsibility test is made within 30 days from date of shipment. | | | |
| (d) Distillation is determined by AASHTO T 59, with modifications to include a 350 ± 5°F (177 ± 3°C) maximum temperature to be held for 15 minutes. | | | |
| Modify the asphalt cement prior to emulsification. | | | |

Table 10

| Latex Modified Cationic Rapid Setting Emulsified Asphalt (LMCRS-2) | | | |
|--|---------------------------|-------------|-------------|
| Tests | AASHTO Test Method | Min. | Max. |
| Emulsion | | | |
| Viscosity, SF, 122°F (50°C), s (Project Site Acceptance/Rejection Limits) | T 59 | 100 | 400 |
| Settlement (a) 5 days, percent | T 59 | | 5 |
| Storage Stability Test (b) 1 d, 24 h, percent | T 59 | | 1 |
| Demulsibility (c) 35 ml, 0.8% sodium dioctyl Sulfosuccinate, percent | T 59 | 40 | |
| Particle Charge Test | T 59 | Positive | |
| Sieve Test, percent | T 59 | | 0.3 |
| Distillation | | | |
| Oil distillate, by volume of emulsion, percent | | | 0 |
| Residue (d), percent | | 65 | |
| Residue from Distillation Test | | | |
| Penetration, 77°F (25°C), 100 g, 5 s, dmm | T 49 | 40 | 200 |
| Torsional Recovery (e) | | 18 | |

- (a) The test requirement for settlement may be waived when the emulsified asphalt is used in less than a five-day time; or the purchaser may require that the settlement test be run from the time the sample is received until it is used, if the elapsed time is less than 5 days.
- (b) May use the 24-hour (1-day) storage stability test instead of the five-day settlement test.
- (c) Make the demulsibility test within 30 days from date of shipment.
- (d) Determine distillation by AASHTO T 59, with modifications to include a $350 \pm 5^\circ\text{F}$ ($177 \pm 3^\circ\text{C}$) maximum temperature to be held for 15 minutes.
- (e) CA 332 (California Test Method)

Co-mill latex and asphalt during emulsification

Table 11

| Cationic Medium Setting Emulsified Asphalt (CMS-2S) | | |
|--|--------------------|---------------|
| Tests | AASHTO Test Method | Specification |
| Emulsion | | |
| Viscosity, SF, 122°F (50°C), s | T 59 | 50 - 450 |
| Percent residue | T 59 | 60 min |
| One-day storage stability, percent | T 59 | 1 max |
| Sieve, percent | T 59 | 0.10 max |
| Particle charge | T 59 | Positive |
| Oil Distillate, percent by volume of emulsion | T 59 | 5-15 |
| Residue | | |
| Penetration, 77°F (25°C), 100g, 5 sec, dmm | T 59 | 100-250 |
| Solubility, percent | T 59 | 97.5 min. |

Table 12

| High Float Medium Setting Emulsified Asphalt (HFMS-2) | | | |
|--|--------------------|------|------|
| Tests | AASHTO Test Method | Min. | Max. |
| Emulsion | | | |
| Viscosity, SF, 122°F (50°C), s (Project Site Acceptance/Rejection Limits) | T59 | 70 | 300 |
| Storage Stability Test, 1d, 24 h, percent | T59 | | 1.0 |
| Sieve Test, percent | T59 | | 0.1 |
| Distillation | | | |
| Oil Distillate, by volume of emulsion, percent | T59 | NA | NA |
| Residue, percent | T59 | 65 | |
| Residue from Distillation Test | | | |
| Penetration, 77°F (25°C), 100g, 5 s, dmm | T49 | 50 | 200 |
| Float Test, 140°F (60°C), s | T50 | 1200 | |
| Solubility in Trichloroethylene, percent | T44 | 97.5 | |
| Ductility, 77°F (25°C) 5cm/min, cm | T51 | 40 | |

Table 13

| High Float Medium Setting Emulsified Polymerized Asphalt (HFMS-2P) (a) | | | |
|--|--------------------|------|------|
| Tests | AASHTO Test method | Min. | Max. |
| Emulsion | | | |
| Viscosity, SF, 122°F (50°C), s (Project Site Acceptance/Rejection Limits) | T 59 | 100 | 450 |
| Storage Stability Test (a) 1 d, 24 h, percent | T 59 | | 0.1 |
| Sieve Test, percent | T 59 | | 0.1 |
| Distillation | | | |
| Oil distillate, by volume of emulsion, percent | T 59 | 1 | 7 |
| Residue (c), percent | T 59 | 65 | |
| Residue from Distillation Test | | | |
| Penetration, 77°F (25°C), 100 g, 5 s, dmm | T 49 | 70 | 300 |
| Float Test, 140°F (60°C), s | T 50 | 1200 | 300 |
| Solubility in trichloroethylene, percent | T 44 | 97.5 | |
| Elastic Recovery, 77°F (25°C), percent | T 301 | 50 | |

- (a) Supply an HFMS-2P (anionic, polymerized, high-float) as an emulsified blend of polymerized asphalt cement, water, and emulsifiers. Polymerize the asphalt cement with a minimum of 3.0% polymer by weight of the asphalt cement prior to emulsification. After standing undisturbed for a minimum of 24 hours, the emulsion shall be smooth and homogeneous throughout with no white, milky separation, pumpable, and suitable for application through a distributor.
- (b) May use the 24-hour (1-day) storage stability test instead of the five-day settlement test.
- (c) Determine the distillation by AASHTO T 59, with modifications to include a $350 \pm 5^\circ\text{F}$ ($177 \pm 3^\circ\text{C}$) maximum temperature to be held for 15 minutes.

Table 14

| High Float Rapid Setting Emulsified Polymerized Asphalt (HFRS-2P) (a) | | | |
|---|---------------------------|-------------|-------------|
| Tests | AASHTO Test method | Min. | Max. |
| Emulsion | | | |
| Viscosity, SF @ 122°F (50°C), s (Project Site Acceptance/Rejection Limits) | T 59 | 50 | 450 |
| Storage Stability Test (b) 1 d, 24 h, percent | T 59 | | 1 |
| Demulsibility 0.02 N Ca Cl ₂ , percent | T 59 | 40 | |
| Sieve Test, percent | T 59 | | 0.1 |
| Distillation | | | |
| Oil distillate, by volume of emulsion, percent | T 59 | | 3 |
| Residue (c), percent | T 59 | 65 | |
| Residue from Distillation Test | | | |
| Penetration, 77°F (25°C), 100 g, 5 s, dmm | T 49 | 70 | 150 |
| Float Test, 140°F (60°C), s | T 50 | 1200 | |
| Solubility in trichloroethylene, percent | T 44 | 97.5 | |
| Elastic Recovery, 77°F (25°C), percent | T 301 | 58 | |

- (a) Supply an HFMS-2SP (anionic, polymerized, high-float) as an emulsified blend of polymerized asphalt cement, water, and emulsifiers. Polymerize the asphalt cement with a minimum of 3.0% polymer by weight of the asphalt cement prior to emulsification. After standing undisturbed for a minimum of 24 hours, the emulsion shall be smooth and homogeneous throughout with no white, milky separation, pumpable, and suitable for application through a distributor.
- (b) May use the 24-hour (1-day) storage stability test instead of the five-day settlement test.
- (c) Determine the distillation by AASHTO T 59, with modifications to include a $350 \pm 5^\circ\text{F}$ ($177 \pm 3^\circ\text{C}$) maximum temperature to be held for 15 minutes.

Table 15

| Cationic Rapid Setting Emulsified Asphalt (CRS-2A,B) | | | |
|---|---------------------------|------------|------------|
| Tests | AASHTO Test Method | Min | Max |
| Emulsion | | | |
| Viscosity, SF, 122°F (50°C), s (Project Site Rejection/Acceptance Limits) | T 59 | 140 | 400 |
| Storage stability test, 24 h, percent | T 59 | | 1 |
| Demulsibility, 35 mL 0.8 percent Sodium Dioctyl Sulfosuccinate, percent | T 59 | 40 | |
| Particle charge test | T 59 | Positive | |
| Sieve test, percent | T 59 | | 0.10 |
| Distillation | | | |
| Oil distillate, by volume of emulsion, percent | T 59 | | 0 |
| Residue, percent | T 59 | 65 | |
| Use PG58-22 and PG64-22 as base asphalt cement for CRS-2A, B, respectively. Specification for high temperature performance: original and RTFO G*/sin within 3°C of grade. | | | |

Table 16

| Emulsified Type B Asphalt Pavement Rejuvenating Agent Concentrate | | |
|--|-----------------------|---------------|
| Tests | Test Method | Limits |
| Viscosity, SF, 77°F (25°C), s | AASHTO T 59 | 25-150 |
| Residue, percent W | AASHTO T 59 (mod) (a) | 62 Min. |
| Sieve Test, percent W | AASHTO T 59 | 0.10 Max. |
| 5-day Settlement | AASHTO T 59 | 5.0 Max. |
| Particle Charge | AASHTO T 59 | Positive |
| Pumping Stability (b) | | Pass |
| Residue from Distillation (a) | | |
| Viscosity @ 140°F (60°C), mm ² /s | AASHTO T 201 | 2500-7500 |

| | | |
|---|-------------|-------------|
| Solubility in 1,1,1 Trichloroethylene, percent | AASHTO T 44 | 98 Min. |
| Flash Point, COC | ASTM D 92 | 204°C, Min. |
| Asphaltenes, percent W | ASTM D 2007 | 15 Max. |
| Saturates, percent W | ASTM D 2007 | 30 Max. |
| Aromatics, percent W | ASTM D 2007 | 25 Min. |
| Polar Compounds, percent W | ASTM D 2007 | 25 Min. |
| <p>(a) Determine the distillation by AASHTO T 59 with modifications to include a 300 ±5°F (149±3°C) maximum temperature to be held for 15 minutes.</p> <p>(b) Test pumping stability by pumping 475 ml of Type B diluted 1 part concentrate to 1 part water, at 77°F (25°C) through a 1/4 inch gear pump operating at 1750 rpm for 10 minutes with no significant separation or coagulation in pumped material.</p> <p>Type B: an emulsified blend of, lube oil and/or lube oil extract, and petroleum asphalt.</p> | | |

Table 17

| Emulsified Type B Modified Asphalt Pavement Rejuvenating Agent Concentrate | | |
|--|-------------|---------------|
| Property | Test Method | Limits |
| Viscosity, SF, 77°F (25°C), s | AASHTO T 59 | 50-200 |
| Residue by distillation or Evaporation (a), percent W | AASHTO T 59 | 62 Min. |
| Sieve Test, percent W | AASHTO T 59 | 0.20 Max. |
| 5-day Settlement, percent W | AASHTO T 59 | 5.0 Max. |
| Particle Charge | AASHTO T 59 | Positive |
| Pumping Stability (b) | | Pass |
| Residue from Distillation (a) | | |
| Viscosity (c) 275°F (135°C), cP | ASTM D 4402 | 150 - 300 |
| Penetration, 77°F (25°C), dmm | AASHTO T 49 | 180 Min. |
| Solubility in 1,1,1 Trichloroethylene, percent | AASHTO T 44 | 98 Min. |
| Flash Point, COC, °F (°C) | AASHTO T 48 | 400(204) Min. |
| Asphaltenes, percent W | ASTM D 2007 | 20-40 |
| Saturates, percent % W | ASTM D 2007 | 20 Max. |
| Polar Compounds, percent W | ASTM D 2007 | 25 Min. |
| Aromatics, percent W | ASTM D 2007 | 20 Min. |
| PC/S Ratio | ASTM D 2007 | 1.5 Min. |
| <p>(a) Determine the distillation by AASHTO T 59 with modifications to include a 300±5°F (149± 3°C) maximum temperature to be held for 15 minutes.</p> <p>(b) Pumping stability is tested by pumping 475 ml of Type B diluted 1 part concentrate to 1 part water, at 77°F (25°C) through a 1/4 inch gear pump operating at 1750 rpm for 10 minutes with no significant separation or coagulation in pumped material.</p> <p>(c) Brookfield Thermocel Apparatus-LV model. ≥ 50 rpm with a #21 spindle, 7.1 g residue, at >10 torque</p> <p>As required by the Asphalt Emulsion Quality Management Plan, UDOT Minimum Sampling and Testing Guide, Section 508) the supplier certifies that the base stock contains a minimum of 15% by weight of Gilsonite Ore. Use the HCL precipitation method as a qualitative test to detect the presence of Gilsonite.</p> | | |

Table 18

| Emulsified Type C Asphalt Pavement Rejuvenating Agent Concentrate | | |
|---|-----------------|----------------------------|
| Property | Test Method | Limits |
| Viscosity, SF, 77°F (25°C), s | AASHTO T 59 | 10-100 |
| Residue (a), percent W (Type C supplied ready to use 1:1 or 2:1. | AASHTO T 59 (a) | 30 Min. 1:1 40 Min. 2:1 |
| Sieve Test, percent W (b) | | 0.10 Max. |
| 5-day Settlement, percent W | AASHTO T 59 | 5.0 Max. |
| Particle Charge | AASHTO T 59 | Positive |
| pH (May be used if particle charge test is inconclusive) | | 2.0 - 7.0 |
| Pumping Stability (c) | | Pass |
| Tests of Residue from Distillation (a) | | |
| Viscosity, 275°F (135°C), mm ² /s | AASHTO T 201 | 475-1500 |
| Solubility in 1,1,1 Trichloroethylene, percent | AASHTO T 44 | 97.5 Min. |
| RTFO mass loss, percent W | AASHTO T 240 | 2.5 Max. |
| Specific Gravity | AASHTO T 228 | 0.98 Min. |
| Flash Point, COC | AASHTO T 48 | 232 °C, Min. |
| Asphaltenes, percent W | ASTM D 2007 | 25 Min., 45 Max. |
| Saturates, percent W | ASTM D 2007 | 10 Max. |
| Polar Compounds, percent W | ASTM D 2007 | 30 Min. |

| | | |
|--|-------------|---------|
| Aromatics, percent W | ASTM D 2007 | 15 Min. |
| (a) Determine the distillation by AASHTO T 59 with modifications to include a 300± 5°F (149 ± 3°C) maximum temperature to be held for 15 minutes. | | |
| (b) Test method identical to AASHTO T 59 except that distilled water is used in place of 2 % sodium oleate solution. | | |
| (c) Test pumping stability by pumping 475 ml of Type diluted 1 part concentrate to 1 part water, at 77°F (25°C) through a 1/4 inch gear pump operating at 1750 rpm for 10 minutes with no significant separation or coagulation in pumped material. | | |
| As required by the Asphalt Emulsion Quality Management Plan, UDOT Minimum Sampling and Testing Guide, Section 508), the supplier certifies that the base stock contains a minimum of 10% by weight of Gilsonite ore. Use the HCL precipitation method as a qualitative test to detect the presence of Gilsonite. | | |

Table 19

| Emulsified Type D Asphalt Pavement Rejuvenating Agent Concentrate | | |
|---|-----------------------|-----------|
| Property | Test Method | Limits |
| Viscosity, SF, 77°F (25°C), s | AASHTO T 59 | 30-90 |
| Residue, (a) percent W | AASHTO T 59 (mod) (a) | 65 |
| Sieve Test, percent W | AASHTO T 59 | 0.10 Max. |
| pH | | 2.0 - 5.0 |
| Residue from Distillation (c) | | |
| Viscosity, 140°F (60°C), cm ² /s | AASHTO T 201 | 300-1200 |
| Viscosity, 275°F (135°C), mm ² /s | AASHTO T 201 | 300 Min. |
| Modified Torsional Recovery (b) | CA 332 (Mod) | 40 % Min. |
| Toughness, 77°F (25°C), in-lb | ASTM D 5801 | 8 Min. |
| Tenacity, 77°F (25°C), in-lb | ASTM D 5801 | 5.3 Min. |
| Asphaltenes, percent W | ASTM D 2007 | 16 Max. |
| Saturates, percent W | ASTM D 2007 | 20 Max. |
| (a) California test method #331 for recovery of residue. | | |
| (b) Torsional recovery measurement to include first 30 seconds. | | |
| (c) Determine the distillation by AASHTO T 59 with modifications to include a 300±5°F(149±3°C) maximum temperature to be held for 15 minutes. | | |

2.3 HOT-POUR CRACK SEALANT FOR BITUMINOUS CONCRETE

- A. Combine a homogenous blend of materials to produce a sealant meeting properties and tests in Table 20.
- B. Packaging and Marking: Supply sealant pre-blended, pre-reacted, and pre-packaged in lined boxes weighing no more than 30 lb.
 1. Use a dissolvable lining that will completely melt and become part of the sealant upon subsequent re-melting.
 2. Deliver the sealant in the manufacturer's original sealed container. Clearly mark each container with the manufacturer's name, trade name of sealant, batch or lot number, and recommended safe heating and application temperatures.

Table 20

| Hot-Pour Bituminous Concrete Crack Sealant | | | |
|---|---|----------------|----------------|
| Application Properties: | | | |
| Workability: | Pour readily and penetrate 0.25 inch and wider cracks for the entire application temperature range recommended by the manufacturer. | | |
| Curing: | No tracking caused by normal traffic after 45 minutes from application. | | |
| Asphalt Compatibility: ASTM D 5329, Section 14. | No failure in adhesion. No formation of an oily ooze at the interface between the sealant and the bituminous concrete or softening or other harmful effects on the bituminous concrete. | | |
| Material Handling: | Follow the manufacturer's safe heating and application temperatures. | | |
| Test Method | Property | Minimum | Maximum |
| AASHTO T 51 | Ductility, modified, 1cm/min, 39.2°F (4°C), cm | 30 | |
| UDOT method 967 | Cold Temperature Flexibility | no cracks | |
| AASHTO T 300 (a) | Force-Ductility, lb force | | 4 |
| ASTM D 5329 | Flow 140°F (60°C), 5 hrs 75°angle, mm | | 3 |
| ASTM D 3405 (b) | Tensile-Adhesion, modified | 300% | |
| AASHTO T 228 | Specific Gravity, 60°F (15.6°C) | | 1.140 |
| ASTM D 5329 | Cone Penetration, 77°F (25°C), 150 g, 5 sec., dmm | | 90 |

| | | | |
|---|--|----|------|
| ASTM D 5329 | Resilience, 77°F (25°C), 20 sec., percent | 30 | |
| ASTM D 4402 | Viscosity, 380°F (193.3°C), SC4-27 spindle, 20 rpm, cP | | 2500 |
| ASTM D 5329 | Bond as per ASTM D 1190, Section 6.4 | | Pass |
| (a) Maximum of 4 lb force during the specified elongation of 30 cm @ 1 cm/min, 39.2°F (4°C). | | | |
| (b) Use ASTM D 3405, Section 6.4.1. Delete bond and substitute tensile-adhesion test in accordance to D 5329. | | | |

PART 3 EXECUTION **Not used**

END OF SECTION

Revision History November 18, 2004 - Revised LMCRS-2 by adding Table 10 from 02745M.

ATTACHMENT C: SPECIAL TERMS AND CONDITIONS

1. **CONTRACT PURCHASE:** This is a requirements contract to provide the State with Asphalt Material for a period of one year with a one year renewal option.
2. **CONTRACT ACCEPTANCE:** At the time the bid form is signed by the offeror, the signature of that offeror will be used as a legally binding signature, if awarded the contract. When signed by the Division of Purchasing and a Utah Department of Transportation representative and assigned a contract number, this document will become a legally binding contract with the offeror for the contract period.
3. **QUANTITY OR AMOUNT ESTIMATES:** This is a requirements contract with the State. Estimated contract amounts are for bidding purposes only and are not to be construed as a guarantee to purchase any specific amount.
4. **PRICE ADJUSTMENTS:** Requests for a price change due to crude oil or transportation cost fluctuations must be submitted for approval along with supporting documentation to State a minimum of 45 days prior to the proposed date of change. Only one price increase shall be allowed each year. An adjustment or amendment to the contract shall be effective when approved by the Procurement Manager or Procurement Supervisor.

If a price increase is approved, the modification to the contract shall become effective within 45 days of the date UDOT received the request accompanied by supporting documentation.

5. **WAGES:** The Contractor shall be responsible for all applicable company wages in accordance with the federal, state, and local laws and ordinances.
6. **INVOICING:** THE CONTRACT NUMBER AND ORDER NUMBER MUST APPEAR ON ALL INVOICES, BILLS OF LADING, PACKAGES AND ALL CORRESPONDENCE RELATING TO EACH ORDER AND DELIVERY.

If an adjustment in payment is necessary due to damage, the cash discount period shall commence on the date final approval is authorized. The State reserves the right to adjust incorrect invoices.

The Contractor shall submit invoices to the appropriate Utah Department of Transportation Region/District, (see attached invoice list). The State will remit payment by mail.

7. **NON-COMPETE CLAUSE:** The Contractor represents its officers and employees are free to contract with the State and are not subject to restrictions by the terms of their present or past employment including, but not limited to an agreement not to compete for a period of time unless disclosure has been made. A Contractor must disclose to the State any possible conflicts, in writing, before the contract is signed and the State will evaluate whether to continue with contract execution. The State may elect to terminate a contract immediately with a Contractor who is subsequently determined to be subject to such restrictions without liability to the State. If the State elects to terminate a contract for this reason, the State will supersede paragraph #12 in Attachment A - Standard Terms and Conditions and will not provide 90 day prior notice to the Contractor.
8. **DELIVERY:** The Contractor agrees to provide the State with materials in transport trucks, F.O.B. Destination as listed on the attached price lists. Deliveries shall be on an as needed basis, and shall be made at a time agreed upon between the Contractor and the Region/District ordering the material.

The Contractor shall require not more than twenty-four (24) hour advance notice on delivery of materials.

The Region/District shall be notified as soon as possible of a late delivery due to a major breakdown, accident or employee illness occurring after the delivery has left the refinery, or loading point. If the Region/District does not receive notification a reduction in payment for that material shall be at a rate of \$75.00 per one quarter hour for seal coat operations, \$25.00 per one quarter hour for all other maintenance material. Late charges will be charged up to four hours.

Any deliveries later than four hours shall not be accepted.

Full credit less transportation costs will be given for material returned due to weather conditions.

The State reserves the right to obtain undelivered quantities from the next lowest bidder for the material, or from another supplier if no other bids exist, with all cash in excess of the Contractor's bid price being the sole responsibility of the Contractor or their Performance Bond.

9. **BASIS OF PAYMENT:** All Asphalt Material complying to applicable specifications shall be measured and paid by the ton, weighed on approved certified scales and supported by weight tickets with each delivery.

The agreed price per ton shall be full compensation for each ton purchased.

Bids submitted shall include freight to designated zones and will reflect the current petroleum fuel surcharge as published by Intermountain Tariff Bureau, Tariff No. 6-C (Intrastate) or Tariff Bureau ICC-NMF 121 (Interstate).

10. **PERFORMANCE AND PAYMENT BOND:** At the time of the execution of the contract, the Contractor shall provide a performance and a payment bond in the amount of fifteen percent (15%) of the total awarded contract guaranteeing performance, product and payment.

ATTACHMENT D: ITEMIZED PRICE LIST

F.O.B. PLANT PICKUP ONLY

| <u>DESCRIPTION</u> | <u>PRICE</u> |
|---|---------------------|
| SC Asphalt Material | \$N/A |
| MC Asphalt Material | \$400.00/ton |
| SS or CSS Emulsified Asphalt Material – Various Grades | \$189.00/ton |
| CRS-2A OR CRS-2B Emulsified Asphalt Materials – Various Grades | \$184.00/ton |
| LCRS-2A OR LMCRS2A Asphalt Materials – Various Grades | \$212.00/ton |
| Asphalt Rejuvenation Type B | \$N/A |
| Asphalt Rejuvenation Type B Modified – Various Grades | \$N/A |
| Asphalt Rejuvenation Type C | \$N/A |
| Asphalt Rejuvenation Type C Modified – Various Grades | \$N/A |
| Asphalt Rejuvenation Type D | \$N/A |
| Asphalt Rejuvenation Type D Modified – Various Grades | \$N/A |
| High Float Emulsion – Various Grades (F.O.B. Grand Junction Co) | \$300.00/ton |

PRICE LISTS

[illegible]

| PRODUCT | REGION ONE | | | | | | | | | | | |
|-----------------|------------|----------|----------|----------|----------|----------|----------|----------|--------|--------|--------|--|
| | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| REJ TYPE C 1:1 | | | | | | | | | | | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| REJ TYPE C 2:1 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| REJ TYPE D1:1 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| REJ TYPE D 2:1 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| CSS DILUTED 1:1 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| CSS DILUTED 2:1 | | | | | | | | | | | | |
| SEM Materials | \$147.00 | \$141.00 | \$155.00 | \$155.00 | \$161.00 | \$151.00 | \$151.00 | \$149.00 | NB | NB | NB | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SS DILUTED 1:1 | | | | | | | | | | | | |
| SEM Materials | \$164.00 | \$159.00 | \$137.00 | \$137.00 | \$143.00 | \$133.00 | \$133.00 | \$131.00 | NB | NB | NB | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SS DILUTED 2:1 | | | | | | | | | | | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| HFE EMULSION | | | | | | | | | | | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| ZONE A | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| HFMS 2 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| HFMS-2S | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| HFMS-2P DILUTED | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |

REQUIRE (2) TWO HOURS OF FREE UNLOADING TIME.
 CHARGE FOR EXCESS UNLOADING TIME \$80.00 PER HOUR.
 OVERNIGHT CHARGE \$300.00.

[illegible]

| PRODUCT | REGION TWO | | | | | | | | | | | | |
|-----------------|------------|----------|----------|----------|--------|--------|--------|--------|--------|--------|--------|----|----|
| | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| REJ TYPE D1:1 | | | | | | | | | | | | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| REJ TYPE D 2:1 | | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| CSS DILUTED 1:1 | | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | \$140.00 | \$153.00 | \$149.00 | \$153.00 | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| CSS DILUTED 2:1 | | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | \$158.00 | \$135.00 | \$130.00 | \$135.00 | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| SS DILUTED 1:1 | | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| SS DILUTED 2:1 | | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| HFE EMULSION | | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| HEMS 1 | | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| HEMS-2S | | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| HEMS-2P DILUTED | | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |

REQUIRE (2) TWO HOURS OF FREE UNLOADING TIME.
 CHARGE FOR EXCESS UNLOADING TIME \$80.00 PER HOUR.
 OVERNIGHT CHARGE \$300.00.

[illegible]

| PRODUCT | REGION THREE | | | | | | | | | | | |
|-----------------|--------------|----------|----------|----------|----------|----------|----------|--------|--------|--------|--------|--|
| | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| REJ TYPE D1:1 | | | | | | | | | | | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| REJ TYPE D 2:1 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| CSS DILUTED 1:1 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | \$139.00 | \$136.00 | \$136.00 | \$142.00 | \$145.00 | \$151.00 | \$150.00 | NB | NB | NB | NB | |
| CSS DILUTED 2:1 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | \$157.00 | \$154.00 | \$154.00 | \$161.00 | \$163.00 | \$169.00 | \$168.00 | NB | NB | NB | NB | |
| SS DILUTED 1:1 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| SS DILUTED 2:1 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| HFE EMULSION | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| HFMS 2 | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| HFMS-2S | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |
| HFMS-2P DILUTED | | | | | | | | | | | | |
| SEM Materials | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | |

REQUIRE (2) TWO HOURS OF FREE UNLOADING TIME.
 CHARGE FOR EXCESS UNLOADING TIME \$80.00 PER HOUR.
 OVERNIGHT CHARGE \$300.00.

[illegible]

| PRODUCT | PRICE DISTRICT | | | | | | | | | | | | |
|-----------------|----------------|----------|----------|----------|----------|----------|--------|--------|--------|--------|--------|--------|--------|
| | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| REJ TYPE D1:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| REJ TYPE D 2:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| CSS DILUTED 1:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| SEM Materials | \$144.00 | \$148.00 | \$145.00 | \$166.00 | \$173.00 | \$173.00 | NB | NB | NB | NB | NB | NB | NB |
| CSS DILUTED 2:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| SEM Materials | \$172.00 | \$176.00 | \$177.00 | \$184.00 | \$191.00 | \$191.00 | NB | NB | NB | NB | NB | NB | NB |
| SS DILUTED 1:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| SEM Materials | \$156.00 | \$156.00 | \$153.00 | \$151.00 | \$159.00 | \$169.00 | NB | NB | NB | NB | NB | NB | NB |
| SS DILUTED 2:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| SEM Materials | \$181.00 | \$179.00 | \$175.00 | \$183.00 | \$193.00 | \$194.00 | NB | NB | NB | NB | NB | NB | NB |
| HFE EMULSION | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| SEM Materials | \$308.00 | \$305.00 | \$296.00 | \$304.00 | \$314.00 | \$315.00 | NB | NB | NB | NB | NB | NB | NB |
| HFMS 2 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| SEM Materials | \$223.00 | \$226.00 | \$232.00 | \$238.00 | \$242.00 | \$242.00 | NB | NB | NB | NB | NB | NB | NB |
| HFMS-2S | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| SEM Materials | \$295.00 | \$294.00 | \$301.00 | \$315.00 | \$325.00 | \$329.00 | NB | NB | NB | NB | NB | NB | NB |
| HFMS-2P DILUTED | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | ZONE L | ZONE M |
| SEM Materials | \$197.00 | \$194.00 | \$185.00 | \$193.00 | \$203.00 | \$204.00 | NB | NB | NB | NB | NB | NB | NB |

REQUIRE (2) TWO HOURS OF FREE UNLOADING TIME.
 CHARGE FOR EXCESS UNLOADING TIME \$80.00 PER HOUR.
 OVERNIGHT CHARGE \$300.00.

[illegible]

| PRODUCT | RICHFIELD DISTRICT | | | | | | | | | | | | |
|------------------------|--------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--------|----|----|
| REJ TYPE D1:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| REJ TYPE D 2:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| CSS DILUTED 1:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | \$142.00 | \$145.00 | \$153.00 | \$153.00 | \$157.00 | \$158.00 | \$167.00 | \$162.00 | \$164.00 | \$172.00 | NB | | |
| CSS DILUTED 2:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | \$160.00 | \$163.00 | \$171.00 | \$171.00 | \$175.00 | \$176.00 | \$185.00 | \$180.00 | \$182.00 | \$190.00 | NB | | |
| SS DILUTED 1:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | | |
| SS DILUTED 2:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | | |
| HFE EMULSION | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | | |
| HFMS 2 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | | |
| HFMS-2S | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | | |
| HFMS-2P DILUTED | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K | | |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | | |

REQUIRE (2) TWO HOURS OF FREE UNLOADING TIME.
 CHARGE FOR EXCESS UNLOADING TIME \$80.00 PER HOUR.
 OVERNIGHT CHARGE \$300.00.

[illegible]

| PRODUCT | CEDAR CITY DISTRICT | | | | | | | | | | |
|-----------------|---------------------|----------|----------|----------|----------|----------|--------|--------|--------|--------|--------|
| REJ TYPE D1:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| REJ TYPE D 2:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| CSS DILUTED 1:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K |
| SEM Materials | \$151.00 | \$144.00 | \$149.00 | \$155.00 | \$160.00 | \$167.00 | NB | NB | NB | NB | NB |
| CSS DILUTED 2:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K |
| SEM Materials | \$169.00 | \$162.00 | \$167.00 | \$173.00 | \$178.00 | \$185.00 | NB | NB | NB | NB | NB |
| SS DILUTED 1:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| SS DILUTED 2:1 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| HFE EMULSION | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| HFMS 2 | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| HFMS-2S | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |
| HFMS-2P DILUTED | ZONE A | ZONE B | ZONE C | ZONE D | ZONE E | ZONE F | ZONE G | ZONE H | ZONE I | ZONE J | ZONE K |
| SEM Materials | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB | NB |

REQUIRE (2) TWO HOURS OF FREE UNLOADING TIME.
 CHARGE FOR EXCESS UNLOADING TIME \$80.00 PER HOUR.
 OVERNIGHT CHARGE \$300.00.